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*caroliniana*, has become at some places in Europe); for it is not, like *S. auriculata*, a tropical species, but one of wide distribution in northern Eurasia where it must needs endure winters as severe as ours.—C. A. W.

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IS BOTRYCHIUM DISSECTUM A STERILE MUTANT OF *B. OBLIQUUM*?—The question in the title, "Is *Botrychium dissectum* a sterile mutant of *B. obliquum*," is based on a recent article by C. J. Chamberlain in the Botanical Gazette (70: 387) under the title, "Grouping and mutation in *Botrychium*." The question is raised in the present instance, not with the idea of casting doubt on Prof. Chamberlain's conclusions, but because the problem is one to which readers of the FERN JOURNAL should be able to contribute additional information. Will you not look over the following summary of the Chamberlain article for the purpose of comparing its data with your own collecting experience or of making it the basis of special study in the coming season? We shall then be glad to hear reports from as many people and places as possible.

*Botrychium* is reported as almost invariably growing in groups of individuals, not as isolated plants. By "groups" in this case the writer does not mean necessarily that the plants will be clumped together, but that in a patch of thicket where one plant is found, others are almost certain to exist. Several such woods groups are shown plotted on cross-section paper, in Prof. Chamberlain's article, with the location of each individual plant marked, and with different marks for different species of *Botrychium*.

Of particular importance to the present topic is another observation, that *B. dissectum* never occurs except in association with *B. obliquum*, and then always in smaller numbers. In four plots, mainly in different

localities in Ohio, out of five hundred and one plants of these two species observed and plotted, nineteen only were *B. dissectum*, a ratio of about twenty-five to one. Has any reader ever found *dissectum* growing in groups by itself, or in greater numbers than *obliquum* when in the same group? It will not do to walk through a wood and report one *dissectum* seen and no *obliquum*. Only by painstaking search, yard by yard, if necessary, can the matter of occurrence and distribution be really settled.

The sporangia of *dissectum* are reported as smaller than those of *obliquum*, with numerous aborted sporangia in addition. Microscopic study showed that even the apparently normal ones were often without any spores inside, or with small abnormal looking spores. If *dissectum* is really sterile, or nearly so this would account for its relative infrequency in comparison with *obliquum*. But if it is sterile what is the source of the plants which do occur?

Its origin as a rather frequent mutant is postulated, not only on its apparent sterility, but also on its reported constant association with *obliquum*, and of course, on its very noticeable close resemblance to that form. The only distinctive characters noted are its smaller less fertile sporangia, a somewhat smaller size, and its fimbriated "dissected" margins. Just what this dissection represents is debatable. It is certain that very similar if not identical types of variation may occur in unrelated fern genera. *Dissectum* may represent a type of variation like the lacerate or irregularly lobed margins of such ferns as *Cyrtomium Rochfordianum*, a form of the common florists' holly fern; shown also in several of the *Nephrolepis* varieties, in *Polypodium Mayi*, another florists' variety. Such increases in marginal serration are generally accompanied by a decrease in fertility, and even by an entire failure to

produce sori. *Polypodium Maudslayi* (aureum var.) has highly ruffled and lacinate pinnae, and only occasionally, rarely, produces sori.

What are your observations as to the occurrence of *B. dissectum*?—R. C. B.

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## American Fern Society.

### Report of the President for 1920.

The most important event in the history of the Fern Society during the past year was the increase in individual membership dues by one-half, a measure adopted by a nearly unanimous vote. There has since been no falling off in membership; the number of members has, on the contrary, increased to 271, a new mark for the Society. This response has been most satisfactory, and the healthy condition of the Society's finances is admirably summarized in the report of the Treasurer, a short statement which each member of the Society is urged to read carefully.

To a very great extent the usefulness of the Society is directly proportional to the size of its membership, for this determines not only the opportunities for correspondence and for exchange of specimens among those most interested in fern study, but largely sets the limit also to the circulation of the JOURNAL, which is our principal evidence of activity. With more members more pages could be published in each number, more money could be allowed for illustrations, and larger editions could be distributed. And with an increase in circulation, assuming that present editorial excellence is maintained, the influence of the JOURNAL would be increasingly great. Thus, particular attention is being given just now to enlarging the membership, the matter being in the hands of a special committee consisting of Robert A. Ware, Chairman, E. J. Winslow, and Mrs.